

# CALIFORNIA'S HEALTH

STATE DEPARTMENT OF PUBLIC HEALTH  
ESTABLISHED APRIL 15, 1870

PUBLISHED SEMI-MONTHLY

SAN FRANCISCO 2, 760 MARKET STREET

CLASSIFIED AS SECOND-CLASS MATTER JAN. 25, 1949, AT THE POST OFFICE AT SAN FRANCISCO, CALIFORNIA, UNDER THE ACT OF AUG. 24, 1912. ACCEPTANCE FOR MAILING OF THE SPECIAL RATE APPROVED FOR IN SECTION 1103, ACT OF OCT. 3, 1917

VOLUME 10, NUMBER 15

FEBRUARY 15, 1953

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## Prematurity and Its Relationship to Maternal Health

NICHOLSON J. EASTMAN, M.D., Professor of Obstetrics, Johns Hopkins University

The prevention of prematurity is perhaps the most important problem we face today in obstetrics. Some obstetricians might question this sweeping statement, but if they will consider that the prevention of prematurity entails the prevention of preeclampsia,\* the prevention of abruptio placenta,\* and runs pretty much the whole gamut of obstetrics, I think they will agree that there is no more important topic for elucidation in the whole field of maternity.

Let us review first the facts we do know about premature birth, facts that obstetricians everywhere are aware of. We can speak with some degree of familiarity about the causes of approximately half of these births and we shall see here many places where prematurity can be prevented. (Part I) Then we shall turn to the remaining half of the cases of premature birth, in which there is no cause that the obstetrician can definitely put his finger on—in which the cause is quite obscure. At that point we shall have to leave the field of known facts and turn to areas which are somewhat speculative and beyond definite documentation at the present time. (Part II)

First comes the question, "What is the incidence of prematurity?" as we usually define prematurity. By general consensus, prematurity refers to those babies weighing less than 2,500 grams† at birth. In most hospitals, pediatricians and obstetricians adhere to this definition that a baby weighing less than 2,500 grams is premature, because the study of thousands of such babies indicates that when a baby reaches 2,500 grams it is able to cope with extra-uterine conditions just as

Paper given at California's two working conferences on the Prevention of Prematurity: Northern Conference, Asilomar, May 14, 1952; Southern Conference, Arrowhead Springs, May 19, 1952.

well as babies that weigh 3,000 grams or 3,500 grams, but when a baby weighs less than 2,500 grams—in the white race at any rate—there is a higher mortality, a lesser ability to cope with extra-uterine conditions. So the 2,500 grams or 5½ pounds was not

set arbitrarily.

Taking this generally accepted definition of prematurity, I want to turn to some data partly our own data, partly some data from Dr. Bundesen, Commissioner of Health in Chicago, Dr. Edith Potter, Dr. Bauer and Dr. Fishbein, all of Chicago.

TABLE 1  
The Incidence of Premature Infants (Under 2,500 Grams) and of "Previsible" Infants (Under 1,000 Grams) Born in Chicago, 1936-1949, According to Race of Mother

(Compiled from Table 7 of Bundesen, Potter, Fishbein and Bauer, with their kind permission)

Race	Total number of births	Percent under 2,500 grams	Percent under 1,000 grams
White	761,656	6.5	0.4
Nonwhite	111,654	10.0	0.8

Table 1 is based on an enormous experience in Chicago from 1936 to 1949 dealing with almost a million births, and in all probability is fairly representative of the Country at large. In any event, in this study it was found that 6.5 percent of this number of births weighed between 1,000 grams and 2,499 grams and, if we add to that figure the group that weighed between 400 grams and 100 grams (often called immature infants—infants in which survival is quite unlikely), the figure is 7 percent.

The importance of the subject we are dealing with, from the viewpoint of loss of potential American lives, is shown in the death rate in the Chicago series. In

\* See Glossary.

† Note: Weight criterion of prematurity recommended by the World Health Organization includes infants weighing 2,500 grams or less.

mature babies the death rate was 8.3 per 1,000 live births, but, in the premature group there were 147 deaths per 1,000 live births, or, a death rate 18 times that which was encountered in the mature infant. In the very small weight group (the immature group, from 400-1,000 grams) the death rate was 100 times that encountered in the mature infant.

At the Johns Hopkins Hospital, between 1926 and 1949, in 38,000 live births, we had an incidence of prematurity of 11.7 percent. Half of our patients are colored and in these the incidence of babies born under 2,500 grams is higher than in the white. That factor accordingly raises our incidence, as prematurity is ordinarily defined. Whether that same definition is suitable for the colored we shall take up presently. There are some other reasons for this high incidence, including a large number of referred cases.

If we are going to take any steps to prevent prematurity, we must first know the causes of premature birth. These fall into three main groups.

#### PART I

### PREMATURITY AND DEMONSTRABLE OBSTETRIC CAUSES

TABLE 2

#### Prematurity Divided into Three Major Etiologic Groups

Johns Hopkins Hospital, 1926-1949		
	Premature infants	Percent of total prematures
Multiple pregnancy, both spontaneous and operative termination	545	12.2
Operative termination of pregnancy, single pregnancy only (induction or cesarean section)	591	13.3
Spontaneous termination of pregnancy, single pregnancy only	3,323	74.5
Total	4,459 *	100.0

\* 11.7 percent of the total live births.

The data to be presented on this question are based on approximately 4,500 births at the Johns Hopkins Hospital in which the infant weighed 1,000 grams to 2,500 grams. Table 2 demonstrates that 545, or 12.2 percent, of these cases occurred in association with twin pregnancy. It shows further another group in which the obstetrician felt that some dire complication threatened the mother's health or even her life, and that induction of labor or cesarean section was mandatory. There were 591 cases of this type or 13.3 percent of the total premature cases. The third and largest group comprises 3,323 cases, or 74.5 percent of the total, which were single pregnancies, with labor beginning spontaneously and not initiated by the obstetrician.

In what cases can obstetricians, pediatricians, public health workers, and nutritionists take steps to prevent premature birth? In the first place, we cannot

prevent twin pregnancies. No one would want to do so even if he could. But given a twin pregnancy, is there anything we can do to prevent premature labor? Labor starts in twin pregnancies on an average of about three weeks before the usual expected date of confinement. Twins occur only once in every 80 deliveries—but there are two babies as opposed to one—so we can say that one baby in 40 is a twin. Much can be done to prevent prematurity in twins in two ways, as follows:

1. Eclampsia occurs four to five times more frequently in twin pregnancies. By the same token, preeclampsia occurs much more frequently in twin pregnancies. In these cases the obstetrician may occasionally have to intervene more frequently than in a single pregnancy. The lesson to be drawn from a preventive viewpoint in this connection is as follows: As soon as the obstetrician makes a diagnosis of multiple pregnancy, the patient should be regarded as likely to develop preeclampsia. With such a patient, careful instruction as to diet, particularly the reduction of salt in the diet, is a helpful measure.

2. The second preventive step in twin pregnancies is rest. There are several mechanical factors that predispose to prematurity in these cases—the presence of hydramnios, the larger intra-uterine mass, and often a cervix that is pretty well effaced and dilated even a month or more before term. These conditions militate against success in the prevention of prematurity in twins, but arrangements should be made for giving these mothers more rest at home after the twenty-fourth week. We admit many of them to the hospital the last few weeks, often because they are so uncomfortable that they can hardly walk, but also in the belief that rest may give the baby a few more days or possibly a few more weeks of intra-uterine life.

Next let us look at the group of 591 cases, making up 13 percent of all our cases, in which the obstetrician himself was responsible for the premature birth.

TABLE 3

#### Common Conditions Necessitating Operative Termination of Pregnancy—Single Pregnancies Only

Johns Hopkins Hospital, 1926-1949 (Based on Table 2)		
Disease	Cases	Percent
Preeclampsia and eclampsia	213	36.0
Chronic hypertension	102	17.3
Placenta previa	75	12.7
Abruptio placentae	39	6.6
	429	72.6
Miscellaneous conditions	162	27.4
Total	591	100.0

As seen in Table 3, there are certain common conditions which necessitate operative termination of pregnancy. Leading the list is preeclampsia and eclampsia, with 213 cases. What could we have done to prevent these 213 cases of preeclampsia and eclampsia, in

which the babies were premature? If we could have reduced or prevented these cases of preeclampsia and eclampsia, it is reasonable to believe that we would have prevented a goodly portion of prematures because these are cases in which the obstetrician's hand was forced to induce labor or perform a cesarean section.

If there is any way in which we can definitely prevent premature birth in the present state of our knowledge, utilizing only facts that are at our disposal, it is in the field of preeclampsia. Preeclampsia is so important in the prenatal picture that I should like to refer, as an example of what can be done, to some magnificent work that has been done by a group of physicians in the Woman's Hospital in Sydney, Australia. At that hospital they used to average from 10 to 15 cases of eclampsia a year, and a proportionate number of severe preeclampsia. They discovered that eclampsia was not on the decline, but rather the opposite; and, finding the situation intolerable, they mapped out a program in 1947 designed to reduce drastically the incidence of eclampsia. Let it be noted that this hospital, which regularly had had 10 to 15 cases of this disease a year, observed in 1950 no cases whatsoever of eclampsia, so successful was their program.

Now what was this program? They found, as a result of careful study of their prenatal case records, that the bad attenders at prenatal clinics were the patients who were most likely to develop eclampsia, so if a patient didn't come back for a certain visit she was sent a letter. If that didn't bring her in, she was sent a telegram. Finally, as a last resort, the police would call. I mention the police to show to what extremes they went in supervising these patients and in seeing that patients did come in for every visit promptly.

These Australian workers made certain valuable clinical observations as follows: When a patient between the twentieth and thirtieth week of pregnancy gains more than eight pounds in these 10 weeks—she is very likely to have hypertension at the thirty-sixth week. If a young primigravida finds that her wedding ring becomes uncomfortably tight at the twenty-sixth week, she is certain to have hypertension at the thirty-sixth week. On this basis, the authors have coined the phrase: "Pre-hypertensive preeclampsia."

This is a new concept. It is an effort to detect the very earliest diagnostic signs of preeclampsia at a time when it is possible to do something about them. Their warning signal is weight-gain of more than eight pounds between the twentieth and thirtieth week. They also place emphasis on the slightest sign of edema at 26 weeks or so. As soon as the patients were found to fall in this special category in relation to edema, they

were put into a special group. Dieticians reviewed their diets with great care, emphasizing a high protein-low carbohydrate diet with all salt eliminated. This Australian experience is mentioned here because as previously emphasized, if there is one way in which we can reduce the incidence of prematurity on the basis of known facts and known methods, techniques and programs at our disposal, it is in this group of patients with preeclampsia. Whether the same thing can be done in the group with chronic hypertension is questionable.

In the last decade the management of placenta praevia has changed considerably because up to about 1946 or so, a patient who was bleeding from placenta praevia was always regarded as an emergency and the accepted procedure was to deliver the baby immediately. Any temporizing was regarded as entirely too risky for the mother's welfare. Then along came the work of Johnson in Houston, Texas, and MacAfee in Dublin, Ireland. Independently, these two men published series of cases in which they had temporized in women with placenta praevia who were bleeding so early in pregnancy that the baby was quite premature. By carrying these patients along with certain precautions they were able to reduce the incidence of premature delivery and thereby the incidence of infant loss to a figure decidedly lower than it had been previously. This program in placenta praevia, to the surprise of many of us, has turned out to be moderately successful, but not wholly so. If you take any group of placenta praevia cases you will find that about half the babies are mature when bleeding starts. If the baby is mature, the expectant management of placenta praevia obviously serves no purpose.

When a patient with placenta praevia bleeds six weeks or two months before term here is a situation in which temporizing, keeping the patient in bed in a hospital, does offer a chance that the baby may reach maturity. It has been my experience that in about half of these cases in which the patient is carried along, the physician's hand is forced by repeated hemorrhages and delivery seems the better part of wisdom. However, in carefully selected cases, with rigid precautions known to all obstetricians, it is possible to carry a good many of these patients to a time when the baby is mature or nearly so.

When we have eliminated twin pregnancies and when we have eliminated the cases in which the obstetrician himself has intervened, we still have an incidence in our clinic of about 10 percent of premature births. Table 4 shows the role of various diseases in initiating spontaneous premature labor in single pregnancies.



TABLE 4  
Role of Various Diseases in Initiating Premature Labor  
Spontaneous Termination of Pregnancy  
Single Pregnancies Only

Johns Hopkins Hospital, 1926-1949

(Expected incidence on basis of general clinic population would be 10.1 percent; in white, 7.2 percent; in colored, 13.5 percent)

Disease	Total cases (1)	Prematures expected (2)	Prematures found (3)	Percent found (4)	Prematures due to diseases (3 minus 2)
Placenta praevia	107	11	52	48.6	41
Abruptio placentae	174	17	106	60.1	89
Preeclampsia	3,126	315	496	15.9	181
Eclampsia	115	12	29	25.2	17
Chronic hypertension	666	67	145	21.8	78
Syphilis—Negro	2,927	395	470	16.1	75
Syphilis—white	354	25	39	10.7	14
Heart disease	614	61	96	15.6	35
Congenital abnormalities	240	24	60	25.0	36
Total	8,323	927	1,493	17.9	566

Previous studies have been made in which the investigators have specified causes on the basis of a mere association between certain complications of pregnancy and premature delivery. There are gradations of associated complications that may be mentioned in this connection from conditions of little significance, like a broken wrist, to certain conditions like abruptio placentae which we know very definitely cause the premature labor.

Let us take two conditions which are known to produce premature labor spontaneously: Placenta praevia and abruptio placentae.

Table 4 shows 107 cases of placenta praevia. If the placenta praevia had nothing whatsoever to do with the cause of premature birth we would expect about the same incidence of prematurity as in the general clinic population or, in other words, we would expect about 10 percent or 11 prematures in this group. But we found 52, or 48 percent of the 107. I have subtracted the prematures expected from the prematures found, and have concluded that these 41 cases must be due to the disease process, because that is the figure by which the number of prematures found exceeds those expected.

Next, take abruptio placentae, 174 cases. Ten percent of that would be 17 cases. Therefore, if abruptio placentae had nothing to do with premature labor, we would expect 17 cases. We found 106. In other words, we found 89 more prematures than would be expected on the basis that abruptio had nothing to do with this condition. To cite another complication, we had 3,126 cases of preeclampsia and we would expect 315 prematures on a 10 percent basis. We had 496, or 181 more than was expected. This is a relatively small increase and I am not convinced that preeclampsia in itself initiates premature labor. This is a different matter from preeclampsia forcing the obstetrician's hand.

In most studies heretofore made, the investigator would have said that since these mothers had pre-

eclampsia, it follows that preeclampsia caused the premature labor. The same might be said for these other conditions. We have totaled 566 cases due to disease over and above those that would have been expected. We can take this figure and say that we have accounted for these 566 cases very definitely. If you do not like that approach, you may do as other investigators have done and take all 1,493 prematures and say that because these conditions were present, these conditions caused the premature birth. It seems to me that that approach is manifestly wrong. The 566 figure, on the other hand, may err in the other direction. The true figure probably lies somewhere between

Table 5 summarizes the three major etiological groups: (1) twin pregnancies, (2) the disease processes in which the obstetrician himself has seen fit to deliver the patient prematurely, and (3) the large number of cases in which the patient had a spontaneous termination of a single pregnancy.

TABLE 5  
Summary of Causative Factors

Cause of premature birth	Number of premature infants		Percent of total prematures	
	A	B	A	B
Multiple pregnancy (Table 3)	545	545	12.2	12.2
Various diseases; operative termination (Table 5)	591	591	13.3	13.3
Various diseases; spontaneous termination (Table 4)	566	1,493 *	12.7	33.5 *
Unknown	2,757	1,830 *	61.8	41.8 *
Totals	4,459	4,459	100.0	100.0

\* Figures indicate results which would accrue if all associated diseases (preeclampsia, for example) were regarded as responsible for the premature labor. See Table 4 and text.

The group of 566 in Table 5 is the group representing an incidence of prematurity over and above the 10 percent that would ordinarily be expected. That figure is 12.7 percent of the total of 4,459 prematures listed in Column A, Table 5. If you add to this group the 545 cases with multiple pregnancies and the 591 cases with operative termination, that totals 2,757 cases, or 61.8 percent, with cause of prematurity unknown (Column A, Table 5). If you are not satisfied with that, take the other figure in Column B, 1,493. Now this increases the percentage accounted for to 33.5. That approach gives us an unknown incidence of 41 percent. The truth, as I indicated, probably lies somewhere between those two figures. We would probably be safe in saying that of all premature births, 50 percent are not explicable by definitely known obstetrical complications.

I have reviewed with you the 50 percent of premature births in which we do know something about the obstetric complications causing them. We may now go on to speculate about the cause of premature births in the 50 percent of cases in which we have not been able to show a definite cause.

**Glossary**

**Abruptio placentae**—premature detachment of the placenta  
**Eclampsia**—toxic disturbance of late pregnancy with intermittent convulsions followed by coma  
**Edema**—swelling  
**Hydramnios**—excess of the amniotic fluid  
**Placenta previa**—a condition in which the placenta covers or encroaches upon the cervix  
**Preeclampsia**—a toxemia of late pregnancy that precedes the development of eclampsia  
**Primigravida**—a woman who is pregnant for the first time

(Part II Will Appear in Next Issue)

## Newborn Infants in California— 1951: A Summary

Detailed information on the newborn infants in California for 1951 is now available and will be of especial interest to medical and health department personnel. Such definite statistical information as is being given for 1951 will not be available for 1952 until late this year.

The more than one-quarter million babies born in 1951 represented the largest number of live births and the rate of 23.4 per 1,000 population represented the second highest birth rate in the history of the State. High, too, were the proportion of these births occurring in hospitals (97.7 percent) and the proportion delivered by physicians (99.7 percent).

The incidence of premature births was also high (7.3 percent). Using the birth weight as the criterion for prematurity, the incidence of premature birth has been gradually increasing during the last three years. This may be due to more exact reporting of birth weight. The incidence of premature birth in tax-supported hospitals was higher (8.5 percent) than in private hospitals (7.0 percent). This may be an indication of socio-economic factors in premature births. Over half of the plural births (51 percent) were listed as premature by the birth-weight criterion of 5½ pounds or less, even though the gestational period for some may have been nine months. Under the same criterion of birth weight the percentage of prematurity among nonwhite infants was 10.2 as against 7.1 among white infants. California shows the usual pattern in this respect, as various studies have shown that nonwhite infants are usually smaller than white. In 1951 prematurity was mentioned as a factor in 63 percent of the neonatal deaths (those under 28 days), and was given as the main cause of death in 23 percent of these neonatal deaths.

Live births in 1951 to mothers whose usual place of residence was California were distributed by birth weight groups as follows:

	Number	Percent
Total live births.....	260,259	100.0
Total premature (5 pounds 8 ounces or less).....	19,094	7.3
Less than 2 pounds four ounces.....	1,186	0.5
2 pounds 4 ounces-3 pounds 4 ounces.....	1,504	0.6
3 pounds 5 ounces-4 pounds 6 ounces.....	3,558	1.4
4 pounds 7 ounces-5 pounds 8 ounces.....	12,846	4.9
Full term (over 5 pounds 8 ounces).....	239,042	91.8
Weight not stated.....	2,123	0.8

Also available on California's live births in 1951 are data on race (91.6 percent white), sex (51.3 percent male), month of birth (October peak month), age group of mother (largest number of births to mothers age 20-24), and plurality of birth (97.8 percent single births).

## Two Members Reappointed by Governor to State Board of Health

Dr. Sanford M. Moose of San Francisco and Dr. Errol R. King of Riverside have been reappointed by Governor Earl Warren to serve new four-year terms as members of the State Board of Health. The appointments were announced January 27th. The State Board of Health is made up of eight members including the State Director of Public Health, who serves as executive officer of the board. Seven members of the board are required by California law to be physicians and one member to be a dentist. Dr. Moose is the dentist member of the board. Each year two positions on the board become vacant and are filled by appointment by the Governor. The staggering of terms ensures continuity of policy in the board, which functions as a policy making, regulatory, judicial, and licensing body.

## Health Officer for Mono County

A vacancy exists in Mono County for *Health Officer and County Physician*, a position which may be combined with private practice. Mono County, located on the east slope of the Sierra Nevada Mountains, currently has no physician to serve its resident population of 2,100, plus the thousands of persons attracted by the county's vast recreational areas. Salary for the position is \$500 per month plus mileage for official business. A small hospital maintained by the county accepts private patients. The physician who formerly served as health officer and county physician had an established practice.

Further information may be obtained from Mono County Clerk George C. Delury, Courthouse, Bridgeport, California.

## State Board Appoints 1953 Consultants and Advisory Committees

Advisory committees and consultants to serve during 1953 were appointed by the State Board of Public Health at their January meeting. As in past years, the committees and consultants will continue their valuable guidance services to the on-going program of public health in California.

In addition to the advisory committees and consultants listed below, a five-member Hospital Advisory Board, and an eight-member Advisory Hospital Council are appointed by the Governor to advise the State Department of Public Health and the State Board of Public Health in matters pertaining to the hospital program.

The 1953 advisory committees and consultants are as follows:

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Man's clearest pictures of the submicroscopic world are now being made by a University of California scientist, Dr. Robley C. Williams, who has developed a new technique for use with the electron microscope.

—U. C. Clipshet.



## Acute Respiratory Disease Prevalent in California

Information reaching the State Department of Public Health indicates that there is a widespread statewide incidence of acute respiratory illness in California, with common colds a minor part of these illnesses. Not many cases have been serious enough to be reported by physicians as influenza, and of those reported not many have been confirmed as influenza by laboratory analysis.

The best measure of the severity of an influenza outbreak is the death rate for influenza and pneumonia and no increase has occurred in California, nor has there been an increase in the total death rate in the State. However, the U. S. Public Health Service recently reported that influenza is apparently causing some increase in the death rate throughout the Nation as a whole.

The comparatively small number of influenza cases reported in California is probably no indication of the actual incidence of the influenza-like illnesses which apparently have been widespread, but it is probably an indication of the mildness of the condition. Cases of upper respiratory illness usually rise sharply about this time of year, reaching a peak in the latter part of February or in March.

The absentee records of the Los Angeles School System, as of January 28th, showed only a 10 percent absentee rate, which they consider "normal" for this time of year.

Only 106 cases of influenza were reported for the week ending January 17th, and 446 cases for the week ending January 24th. It has been the experience of the department in the past that during a widespread epidemic of influenza as many as 2,000 cases have been reported in a week.

From October 1st to January 27th there have been a total of 35 laboratory confirmed cases of influenza out of 238 paired blood specimens. Thirty-three of these confirmations were of type A and one type B. Virus isolations from throat washings during the week of January 18th to January 24th showed 15 type A prime and 8 type A.

## Dr. Brand Leaves P. H. S. Regional Post for Thailand Mission

Alonzo F. Brand, M.D., has left the position of Regional Medical Director, Public Health Service, Region X, headquarters San Francisco, for assignment as Chief, Public Health Division, Special Technical and Economic Mission to Thailand under the Mutual Security Agency. Dr. Brand has been Medical Director

## NOTICE OF HEARINGS

The State Board of Public Health will hold hearings on March 6, 1953, in Room 709, State Office Building, 217 W. First Street, Los Angeles. At 10 a.m. a hearing will be held on the proposed amendment of regulations, California Administrative Code, Title 17, Chapter 5, Subchapter 1, Group 4, pursuant to the authority of the Health and Safety Code, Sections 203 and 208.

The proposed amendments are for the purpose of safeguarding public drinking water systems by providing adequate cross connection control measures.

At 11 a.m. a hearing will be held on the proposed adoption of regulations pertaining to the production and sale of bottled drinking water under the provisions of Sections 203 and 208 and of Chapter 7, Part 1, Division 5, of the Health and Safety Code.

Copies of regulations are available for inspection in the California State Department of Public Health, Los Angeles and San Francisco offices. Said regulations are made a part of this notice by reference.

WILTON L. HALVERSON, M.D.  
Executive Officer  
State Board of Public Health

since October, 1949, of Region X, which includes the Western States, Alaska, and Hawaii. G. L. Dunnahoo, M.D., has been appointed Acting Regional Medical Director.

## Public Health Positions

### San Joaquin Local Health District

**Public Health Analyst:** Salary range is \$375 to \$470. Especially well qualified applicants will be considered for starting above the first step. For further information write to E. M. Bingham, M.D., District Health Officer, San Joaquin Local Health District, 130 S. American Street, P. O. Box 111, Stockton.

### San Bernardino County

**Public Health Nurses:** The Civil Service Commission of San Bernardino County has announced that a new salary level for public health nurses became effective January 1, 1953. The beginning rate is now \$311 with step raises to a maximum of \$378. There are immediate openings for the Victorville area and for Fontana. California Public Health Nursing certificate is required. However, consideration will be given to applicants who are eligible to apply for certification. A car and valid California motor vehicle operator's license are also essential for the position.

Additional information and application forms may be obtained from the office of the Civil Service Commission, 236 Third Street, San Bernardino.

### Personal Notes

**Dr. Lester Breslow** has returned to his position as Chief of the Bureau of Chronic Diseases, California State Department of Public Health, after a year's leave of absence to act as director of studies for the President's Commission on the Health Needs of the Nation.

**Dr. Myron Prinzmetal**, Director of Research at the Cedars of Lebanon Hospital, Los Angeles, has been appointed to the advisory council to the National Heart Institute of the U. S. Public Health Service, Washington, D. C.

**Dr. Marcia Hays**, Chief of the Bureau of Crippled Children Services, California State Department of Public Health, has returned from Japan where she served under the auspices of the World Health Organization as a short-term consultant to the Japanese Government on their crippled children program.

**Robert S. Webster**, Chief, Division of Administration, State Department of Public Health, was elected national secretary-treasurer of the Society of Delta Omega at their last annual meeting held in Cleveland. Delta Omega is an honorary public health society encouraging scholarship and research among graduate public health students and recognizing attainments in the field of public health.

### Housing Seminar Scheduled for April

A seminar on the Hygiene of Housing will be held at Asilomar April 15-17, 1953, for local California health officers and their directors of sanitation. It will be conducted by the Division of Environmental Sanitation of the California State Department of Public Health in close cooperation with the California Conference of Local Health Officers.

The seminar will consider the participating role of the local health department in an adequate and sustained program of healthful housing. Public health experts experienced in this field will review criteria for evaluation and methods for improvement of the public health aspects of housing. Representatives of other agencies interested in housing will present their views, with emphasis upon the establishment of a working pattern based upon interests shared with the health departments.

### Needs of Migratory Workers' Children to Be Conference Subject

The Southwest Regional Conference on the Needs of Children and Youth of Migratory Workers will be held in Albuquerque, New Mexico, March 4th, 5th, and 6th at the Hotel Hilton. Participants are expected from Arizona, California, Colorado, New Mexico, Texas, and Utah.

The conference was originally planned for August, 1951, but was deferred to this time. Invitations were sent in April of 1952 by Governor Mechem of New Mexico to the governors of the other states of the region asking for participation in joint planning and execution of the conference.

All interested persons in the Southwest region are invited to attend. Representation from a wide range of organizations and agencies is desired.

Address requests for further information to Frank Angel, Jr., Executive Secretary, Southwest Regional Conference, Department of Education, Santa Fe, New Mexico.

### Dr. Roy N. Taylor, Riverside Medical Officer, Dies After Brief Illness

Dr. Roy N. Taylor, Medical Officer, Riverside Health Department, died December 20th after a brief illness. He was 56. In his two years with that department, Dr. Taylor was in charge of the communicable disease control program, and also directed the school health services administered by the department. Previously, he was in charge of the school health program in San Bernardino County for one year, and, before that, practiced pediatrics in Long Beach for 21 years.

Dr. Taylor was a fellow of the American Academy of Pediatrics. At the time of his death he was secretary of the Southwestern Pediatrics Association. He served in the Navy during World War I. A native of Texas, he attended the University of Tennessee Medical School, interned at Children's Hospital in Chicago, and was a resident in pediatrics at Children's Hospital in Los Angeles.

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